

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 1-4. These sheets, which include Figs. 1-4, replace the original sheets including Fig. 1-4.

Attachment: 4 Replacement Sheets

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 14-33 are presently active in this case. The present Amendment cancels Claims 1-13 and adds new Claims 14-33.

The outstanding Office Action objected to the drawings because of informalities. Claims 6-13 are objected to under 37 C.F.R. 1.75 as being in improper form. Claim 1 was rejected under 35 U.S.C. 112, second paragraph, as indefinite and incomplete. Claims 1-13 were rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over Claims 1-11 of U.S. Patent No. 6,552,683. Claims 1-5 were rejected under 35 U.S.C. § 102(e) as anticipated by Raleigh (U.S. Patent No. 6,665,545).

In response to the objection to the drawings, submitted herewith is a Letter Submitting Drawing Sheets along with 4 Replacement Sheets for Figs. 1-4 adding the appropriate legends to the component blocks.

In response to the rejection under 35 U.S.C. § 112, second paragraph, Claims 1-13 have been rewritten and are now represented by Claims 14-33 to correct the noted informalities and to cancel the improper multiple-dependent claim language. In particular, Claims 14-26 correspond to original Claims 1-13. Claim 27 corresponds to original Claim 5, now dependent upon new Claim 17. Claim 28 corresponds to original Claim 6, now dependent upon new Claim 18. Claims 29 and 30 correspond to original Claim 7, now dependent upon new Claims 15 and 18, respectively. Claim 31 corresponds to original Claim 11, now dependent upon new Claim 18. Claim 32 corresponds to original Claim 4, now dependent upon new Claim 18. Claim 33 corresponds to original Claim 13, now dependent upon new Claim 18. In view of new Claims 14-33, it is believed that all pending claims are definite and no further rejection on that basis is anticipated. If, however, the Examiner

disagrees, the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner in a joint effort to derive mutually acceptable language.

In response to the rejection of Claims 1-13 based on the non-statutory obvious-type double patenting over Claims 1-11 of U.S. Patent No. 6,552,683, Applicants are hereby filing a terminal disclaimer in compliance with 37 CFR 1.321(c) to address that rejection.

In response to the rejection of Claims 1-13 under 35 U.S.C. § 102(e), Applicants respectfully request reconsideration of this rejection and traverse the rejection, as discussed next.

Briefly recapitulating, Applicants' invention, as recited in Claim 14, relates to a method for obtaining a transmission gain function for an array of antennae for a base station in a mobile telecommunication system. As explained in Applicants' specification at page 3, lines 6-9, the invention improves upon conventional methods for obtaining a transmission gain function because it optimizes the signal to noise ratio plus interference on the downlink transmission and requires only a small quantity of transmitted information from the uplink transmission. The claimed invention thus leads to improved transmission gain function for the base station in a mobile telecommunication system.

Turning now to the applied prior art, the Raleigh patent discloses a method for forming an adaptive phased array transmission beam pattern at a base station without any knowledge of array geometry or mobile feedback.¹ However, Raleigh fails to teach a downlink channel vector representing an angular sampling of a transfer function of the downlink channel in M directions k , $k=0, \dots, M-1$, belonging to an angular range covered by the array of antennae. On the contrary, Raleigh explicitly teaches that the technique is blind in that the antenna beam is formed in the absence of explicit knowledge of the array

¹ See Raleigh, in the Abstract.

geometry.² A method that is “blind” with respect to an antenna array configuration, as taught by Raleigh, is not a method using a downlink channel vector representing an angular sampling of a transfer function of the downlink channel in M directions.

Furthermore, Raleigh does not disclose a noise power matrix D_d which is a function of a power of said isotropic noise N' , a power of said downlink interference I_d and a downlink channel vector $\overline{C_d}$, as further cited in Applicants' independent Claim 14.

Therefore, the prior art fails to teach or suggest every feature recited in Applicant's claims, so that Claims 14-33 are patentably distinct over the prior art. Accordingly, Applicant respectfully traverses, and requests reconsideration of, the rejection based on the Raleigh patent.³

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 14-33 is earnestly solicited.

² See Raleigh, at column 3, lines 43-45.

³ See MPEP 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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